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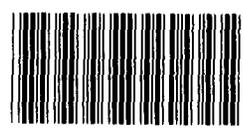
REPORT BY THE COMPTROLLER  
GENERAL OF THE UNITED STATES

AIR LAUNCHED CRUISE MISSILE  
SHOWS PROMISE BUT PROBLEMS  
COULD RESULT IN OPERATIONAL  
LIMITATIONS

D I G E S T

The Air Launched Cruise Missile (ALCM) is a subsonic, jet-powered airframe armed with a nuclear warhead for use against a variety of targets. ALCM uses sophisticated navigational aids for flying at low altitudes, avoiding detection, and for obtaining a high degree of accuracy in striking targets. ALCM is to be used with the bomber component of U.S. strategic offensive forces. (See p. 1.)

This report is part of GAO's annual review efforts to provide the Congress with an independent evaluation of certain weapon system programs, and with information to consider when making judgments concerning the ALCM program. The Department of Defense has placed the highest national priority on the deployment of ALCM to preclude shortfalls in strategic weapons in the 1980s.



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On September 30, 1981, ALCM attained first alert capability status, a major program milestone leading to initial operational capability planned for December 1982. First alert capability refers to 1 B-52G bomber capable of alert status and equipped with (1) an offensive avionics system, (2) 12 external ALCMs, and (3) internal short-range missiles and/or gravity bombs. Initial operational capability requires a B-52G squadron--16 aircraft--similarly equipped. (See p. 3.)

Meeting initial operational capability in December 1982 with a fully operational missile may be achievable, albeit difficult. There are problems to be resolved, solutions to be evaluated, and considerable testing to be performed. The seriousness of current and potential problems and the speed with which they can be resolved will determine whether this date can be successfully met. (See p. 7.)

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PROBLEMS IDENTIFIED  
IN OPERATIONAL TESTING

Although the first alert capability milestone was met, the program has not been an unqualified success. While recent testing has been successful and has demonstrated that ALCM has the potential to perform its mission, problems have been identified which require corrective action to realize its full potential. Specifically:

- Operational testing completed prior to first alert capability was insufficient to provide a complete evaluation. Based on the testing completed, the Air Force's independent test unit rated operational effectiveness and operational suitability deficient. (See pp. 3 to 5.)
- Testing has not been operationally realistic. The Air Force intends to implement testing in a more realistic environment in late 1982 or early 1983. However, this allows no time to implement corrective actions, if needed, prior to initial operational capability planned for December 1982. (See p. 5.)
- The uploading of ALCM pylons to the B-52 is rated deficient by the Air Force's independent testers. The process takes excessive time even when performed by highly trained personnel. If not corrected, this could reduce the number of aircraft which can be successfully readied in an emergency situation. (See pp. 5 and 6.)

TESTING IS BEHIND SCHEDULE

Testing is behind schedule and has delayed the identification of possible additional problems. This is characteristic of highly concurrent programs and underlines the necessity to further complete the development process and avoid deploying ALCMs in significant numbers with operational limitations which may require costly modifications. Much testing remains to be done before the initial operational capability milestone to ensure that the deficiencies identified during testing can be adequately resolved. Specifically:

- Two ALCM test launches which were to have been completed by March 1981 were deferred until after first alert capability in September 1981.

Air Force officials said that these tests were recently completed and were considered successful. GAO however, did not have sufficient time to review and comment on the test results. Offensive avionics system testing, including testing integrated with a B-52, is also behind schedule. (See p. 6.)

--Engine performance is a serious concern. Its reliability and the effects of long-term dormant storage are still unknown. Initial testing of engine storage reliability is not scheduled to be completed until about mid-1983, nearly 2 years after initial deployment and 1/2 year after initial operational capability. (See p. 6.)

--The mission planning system has experienced development problems and is also behind schedule. This system must work well if ALCM is to be used as planned. Testing, however, of the fully integrated system is not to occur until after initial operational capability. (See p. 7.)

#### MATTERS FOR CONSIDERATION BY THE CONGRESS

It is questionable whether ALCM can meet its initial operational capability in December 1982 and it appears the risk is increasing that initial operational capability may not be met with a fully operational missile. The initial operational capability milestone seems to have been the driving force in the premature completion of other milestones and has raised concern. GAO believes that unless this matter is resolved, ALCM could be deployed in significant numbers with operational limitations which may require costly modifications.

The Congress should consider funding only limited quantities of ALCMs unless the problems have been resolved or at least minimized to the point where there is little risk that missiles with limited capabilities will not be deployed in significant numbers.

#### SURVIVABILITY IS A CONCERN

ALCM's survivability against Soviet defenses is a concern to the U.S. intelligence community and others in the Department of Defense when calculating the longevity of the weapon as a credible

deterrent. The Soviet Union may at some time in the future devise threat systems that place the current generation of ALCM at risk, diminishing its effectiveness to an unacceptable level. Survivability is a complex issue; therefore, estimates of the missile's survivability are highly dependent on several assumptions, such as the number of enemy defenses deployed, the effectiveness of these defenses, and the success of U.S. forces in neutralizing these threats. The Department of Defense has begun efforts to improve the survivability of both the missile and its carrier aircraft. (See pp. 9 to 12.)

#### VIEWS OF PROGRAM OFFICIALS

GAO did not request official comments on this report because of the need to issue the report in time for congressional consideration of the fiscal year 1983 defense budget request. GAO did, however, discuss a draft of this report with high level officials associated with the management of the program and they agreed with the facts presented. Their views are included as appropriate.

They disagreed that the Congress should consider funding only limited quantities of ALCMs unless the problems have been resolved or at least minimized to the point where there is a minimal risk that missiles with limited capabilities will not be deployed in significant numbers. Specifically, they disagreed because testing to date has shown that many of the problems experienced early in the ALCM test missions have been resolved and that the Air Force is committed to procure ALCM at a rate consistent with force structure requirements to preclude shortfalls in U.S. strategic capabilities. They further stated that any interruption in ALCM quantities would adversely impact these capabilities.

Although GAO agrees that recent testing has been successful, and shortfalls in strategic capabilities are an important concern, problems have been identified which require corrective action to realize the missile's full potential. Also, testing is behind schedule and has delayed the identification of possible additional problems. This is characteristic of highly concurrent programs and underlines the necessity to further complete the development process and avoid deploying ALCM in significant numbers with operational limitations which may require costly

modifications. Much testing remains to ensure that the deficiencies identified during testing can be adequately resolved before initial operational capability.